

NASA TECH BRIEF



This NASA Tech Brief is issued by the Technology Utilization Division to acquaint industry with the technical content of an innovation derived from the NASA space program.

Thermally Conductive Metal Wool-Silicone Rubber Material Can Be Used as Shock and Vibration Damper

The problem: For certain space-vehicle applications there was a requirement for a thermally conductive, shock- and vibration-absorbing material that would serve as a spacer in equipment mountings, and be capable of withstanding temperatures of 255°F for 24 hours.

The solution: Pads of bronze wool impregnated with a silicone rubber.

How it's done: Commercially available bronze wool is first formed into thin mats, which are then placed between two metal plates that have been spread with an uncured silicone rubber. A pressure of 50,000 pounds per square inch is applied to the units in a hydraulic press for a 24-hour curing

period at room temperature. The resultant product is a thin sheet or pad of thermally conductive, shock-absorbing material. While not new in concept, it was found to have a better combination of elasticity, heat resistance, and thermal conductivity than similar commercially available materials.

Note:

Suggested uses for this material include shock and vibration absorbers, pressure-sealing gaskets, and r-f shielding gaskets.

Patent status: NASA encourages commercial use of this innovation. No patent action is contemplated.

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